DRAFT
CHARGE TO REVIEWERS

Peer Review Draft of:
U.S. EPA's HUMAN HEALTH RISK ASSESSMENT PROTOCOL
FOR HAZARDOUS WASTE COMBUSTION FACILITIES

The peer review draft U.S. EPA guidance entitled *Human Health Risk Assessment Protocol for Hazardous Waste Combustion Facilities* (HHRAP) (EPA530-D-98-001A), dated July 1998, is a three volume set of guidance on how to perform risk assessments at hazardous waste combustion facilities. The HHRAP has been developed as national guidance to consolidate information presented in other risk assessment guidance and methodology documents previously prepared by U.S. EPA and state environmental agencies. In addition, the HHRAP also addresses issues that have been identified while conducting risk assessments for existing hazardous waste combustion units. The HHRAP is intended as guidance for conducting risk assessments, and an information resource for permit writers, risk managers, and community relations personnel.

External peer reviewers have been selected representing scientific disciplines generally covered in the HHRAP. These scientific disciplines consist of combustion engineering, air dispersion modeling, fate and transport, exposure assessment, and toxicology. As a reviewer, you should use your best technical knowledge and professional judgment to consider and provide comment on the technical accuracy, completeness and scientific soundness of your charged review. In addition, it is extremely important to not only comment on inadequacies but also to recommend a specific solution or alternative. It is also imperative that the reviewer remember the intended use of the guidance when developing recommendations. Each reviewer is asked to focus on several specific issues in his or her area of expertise with comments on other areas invited but optional. Your comments and recommendations will be considered in finalizing the HHRAP.

All reviewers should be familiar with the Introduction (Chapter 1). In addition, each reviewer should focus on specific chapters and /or volumes that correspond to subject matter specified in their respective charged review. The charge consists of general and specific technical issues provided for consideration

and written comment. In considering limits to schedule and resources, each reviewer should first focus on addressing the charged specific technical issues, with response to general issues being provided as time and resources allows.

General Issues

In addition to providing review and comment on assigned specific technical issues, each reviewer should also address the following general issues, as applicable:

1. Comment on the organization of the section reviewed. Is the presentation of information clear and concise considering the technical complexity of the subject and intended audience?

2. Does the purpose of the HHRAP as stated in the Introduction (Chapter 1) accurately reflect the presented methodologies and scope?

3. As with any risk assessment, there are always additional data and method development efforts that could be undertaken to reduce the level of uncertainty. However, are there any major data or methodological gaps within this guidance specific to the sections reviewed that would preclude using for regulatory decision making? If so, how should they be addressed?

4. What long-term research would you recommend that could significantly improve risk assessments of this type in the future?

Specific Technical Issues

The reviewer is charged with considering and providing written comment and recommendations on specific technical issues generally defined as being within the scientific discipline of human health toxicology. These specific technical issues were identified through public comment as being significant and requiring additional external review. The reviewer should be familiar with the sections of the HHRAP referenced within the technical issue.

Charge to External Reviewers
Human Health Toxicology
November 15, 1999

1. Comments were received regarding guidance presented for inclusion of the "unknown" or unspeciated total organic emission (TOE) data when estimating stack emission rates (Section 2.2.1.3). Given the objectives of the HHRAP and limitations associated with analyses of stack gas, is the guidance on assigning toxicity values to the "unknown" or TOE portion of the emissions adequate and scientifically sound? How much weight should be given to risks and uncertainties resulting from the "unknown" portion of the emissions when making risk management decisions?

2. Comments were received regarding guidance presented for evaluation of acute toxicity and the AIEC values presented in the HHRAP (Appendix A-4). Review and comment on issues pertaining to evaluating acute toxicity and recommended AIEC values, specifically (1) should AIEC values presented in Appendix A-4 be removed to prevent use of potentially out-of-date values, (2) should AIEC values be updated to include values provided in OEHHA's 1998 revised draft, (3) should a more complete description of the effects of concern when evaluating acute risks be provided, and (4) are OEHHA's RELs comparable to other AIECs.

3. Comments were received regarding assumptions governing determination of route-to-route extrapolations of toxicity benchmarks presented in the HHRAP (Appendix A-3). Is route-to-route extrapolation appropriate and conservative to determine benchmark values for use in an initial screen of potential toxicity of compounds for which peer reviewed toxicity benchmarks are not available?

4. Comments were received concerning the recommendation to evaluate noncarcinogenic risk of dioxins by comparing exposures to national average background exposure levels, using 1 pg/kg/day for adults (Section 2.3.1.2). Is the recommended benchmark appropriate for evaluating noncarcinogenic risk of dioxins for adults?

5. Comments were received regarding the recommendation to evaluate coplanar PCB congeners in the risk assessment using dioxin toxicity equivalency factors (TEFs) (Section 2.3.3). Is the guidance for evaluating coplanar PCB congeners in the risk assessment using dioxin TEFs scientifically valid?